Bonneville Power Administration
Fish and Wildlife Program FY99 Proposal Form

How this form is structured

There are ten major sections to this form. Sections 1 through 5 are database-style fields in which specific information is being sought, so your input is restricted to the gray boxes below. *The boxes are pointers to indicate where to type; they will grow as you type more text, and they won't print as gray boxes.* These sections include: General Administrative Information; Key Words; Objectives, Tasks and Schedules; Relationship to Other Bonneville Projects; and Budget.

In Sections 1 through 5, each field is briefly described on the form itself, and for some fields more tips are shown in the status bar (bottom of the screen). For tables where more rows may be needed than are provided, press Alt-R from within the table to add a row at the end.

Sections 6 through 10 accept a narrative format in which more open-ended questions are asked and you may respond at length in paragraph form. Descriptions are provided on the form. These sections include: Abstract, Description, Relationships to Other Projects, Personnel, Information/Technology Transfer.

Steps to complete the form

1. First, read the Guidelines to Proposals.
2. Second, save this form. For ongoing projects, use your project number.DOC (example: 8909900.DOC). For new proposals, use a filename other than BLANK.DOC, preferrably, your agency acronym and your initials (example: NMFSWS1.DOC).
3. Press Tab to move to the first field (Title of Project), and start typing.
   NOTE: When you exit the Project Title or Project Number fields, your screen may display a "Header" box briefly. The form is updating itself, and will continue normally.
4. Fill in all fields (gray boxes) pressing Tab to advance from one field to the next. Then fill in narrative input areas, pressing down arrow to advance.
5. Print the completed document.
6. Save the document to diskette and mail both paper and diskette to:
   Bonneville Power Administration - EW
   ATTN: Connie Little
   FY99 Proposals
   P.O. Box 3621
   Portland OR 97208-3621

Call Jim Middaugh at the Northwest Power Planning Council (503) 222-5161 or (800) 222-3355 or email middaugh@nwppc.org if you have additional questions.

Proposals must be received to Bonneville by 5pm PST on Friday, January 23, 1998. Late proposals will not be reviewed for FY99 funding. This information will be the only material submitted for independent scientific review. It is essential that the relevant information be provided completely but concisely.

Section 1. General administrative information

Title of project. 75 characters or less; do not include the contractor name or acronym; use abbreviations if appropriate; start with action verbs, i.e., "Evaluate Coho...", not "Evaluation of Coho".

Evaluate Effects Of Habitat Work Conducted In Fifteenmile Creek (Fy 98).

Bonneville project number, if an ongoing project _____

Business name of agency, institution or organization requesting funding
Oregon Department of Fish and Wildlife

Business acronym (if appropriate) ODFW

Proposal contact person or principal investigator:

Name	Erik Olsen
Mailing Address	3450 West 10th
City, ST Zip	The Dalles, OR 97058
Phone	541-296-8045
Fax	541-296-7889
Email address	

Subcontractors. List other agencies or entities that will receive funding under this project, either through sub-contracts managed by the project sponsor or, where multiple agencies are involved as joint sponsors, through primary contracts managed by Bonneville. If another entity will be responsible for the long term maintenance of the project, identify them here.

List one subcontractor per row; to add more rows, press Alt-R from within this table

Organization	Mailing Address	City, ST Zip	Contact Name

NPPC Program Measure Number(s) which this project addresses. Refer to 1994 Fish and Wildlife Program as amended in 1995; NPPC staff will proof this field and correct if necessary; separate multiple measure numbers with commas.
3.1B,3.2,3.3D.1

NMFS Biological Opinion Number(s) which this project addresses. If the project relates to the Kootenai Sturgeon Biological Opinion, the NMFS Hydrosystem Operations Biological Opinion, or other Endangered Species Act requirements, enter the Action Number and Biological Opinion Title.

Other planning document references. If the project is called for in the National Marine Fisheries Service *Snake River Salmon Recovery Plan*, or in *Wy Kan Ush Me Wa Kush Wit*, the Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs and Yakama tribes, in U.S. Forest Service or Bureau of Reclamation land management plans, or in local area subbasin or watershed plans, or in other planning documents, provide the name of the plan and reference citation where the need is identified.

If the project type is "Watershed" (see Section 2), reference any demonstrable support from affected agencies, tribes, local watershed groups, and public and/or private landowners, and cite available documentation.

Columbia River Intertribal Fish Commission. 1996. Wy-Kan-Ush-Mi Wa-Kish-Wit. Spirit of the salmon. The Columbia River anadromous fish restoration plan of the Nez Perce Umatilla, Warm Springs, and Yakama tribes. Portland, Oregon, Volume II::34-35

Subbasin. List subbasin(s) where work is performed. Use commas to separate multiple subbasins. Coordination projects or those not affecting particular subbasins may omit this field.

Fifteenmile Creek

Short description. Describe the project in a short phrase (less than 250 characters). Give information that is not in the title. If possible start this field with an action verb (protect, modify, develop, enhance, etc.) rather than a noun (this project protects). There is room for a more detailed project abstract later in the narrative section, so please keep this answer short.

Estimate smolt production and adult escapements for the endemic wild population of winter steelhead in Fifteenmile Creek and collect information on selected life history and biological characteristics of the native population..

Section 2. Key words

For identifying and sorting, mark key words below that most specifically describe this project. Under each heading (Programmatic Categories, Activities, Project Types), find the **one** item that most applies to your project, and mark it with an X in the Mark column. If other items in the same heading also apply, mark them with a plus sign or asterisk.

Mark	Programmatic Categories	Mark	Activities	Mark	Project Types
X	Anadromous fish		Construction		Watershed
	Resident fish		O & M		Biodiversity/genetics
	Wildlife		Production	X	Population dynamics
	Oceans/estuaries		Research		Ecosystems
	Climate	X	Monitoring/eval.		Flow/survival
	Other		Resource mgmt		Fish disease
			Planning/admin.		Supplementation

_____	Enforcement	_____	Wildlife habitat en-
_____	Acquisitions		hancement/restoration

Other keywords. If there are other key words that would help identify your project, enter them below, separated by commas; example key words: DNA, stock identification, life history, sampling, modeling, nutrient dynamics, predation, hydrodynamics, gas bubble disease, disease names, hatchery-wild interactions, ecological interactions.
Production, Escapements, Life history

Section 3. Relationships to other Bonneville projects

Describe any interdependencies with other projects funded under the Fish and Wildlife Program. Don't include general relationships to other projects, but target those that depend on this project being funded, or vice versa. There is room in Section 7 below to comment on other relationships or to describe these more fully.

If you need more rows, press Alt-R from within this table.

Project #	Project title/description	Nature of relationship
93040	Fifteenmile Creek Habitat Restoration Project	This project will be evaluated by the proposed project.

Section 4. Objectives, tasks and schedules

This section has three parts: a) Objectives and tasks table, b) Objective schedules and costs table, c) other schedule fields. Instructions for each part follow the headings.

Objectives and tasks

Briefly describe measurable objectives and the tasks needed to complete each objective. Use Column 1 to assign numbers to objectives (for reference in the next table), and Column 3 to assign letters to tasks. Use Columns 2 and 4 for the descriptive text. Objectives do not need to be listed in any particular order, and need only be listed once, even if there are multiple tasks for a single objective. List only one task per row; if you need more rows, press Alt-R from within this table.

Obj 1,2,3	Objective	Task a,b,c	Task
1	Determine wild winter steelhead smolt production from the Fifteenmile Creek subbasin.	a	Estimate numbers of downstream migrant wild winter steelhead past a migrant trap located near the mouth of Fifteenmile Creek.
1		b	Estimate the temporal distribution of downstream migrant smolt winter steelhead.

1		c	Estimate age structure of downstream migrant winter steelhead smolts.
1		d	Estimate selected morphometric characteristics of downstream migrant wild winter steelhead smolts: including mean fork length (mm) and condition factor.
1		e	Compile and analyze wild juvenile smolt winter steelhead data collected during the field season and provide a summary of the data in an annual progress report.
2	Determine escapements of wild adult winter steelhead to the Fifteenmile Creek subbasin.	a	Estimate escapements of wild adult winter steelhead to an adult trapping facility located near the mouth of Fifteenmile Creek.
2		b	Estimate temporal distribution of upstream migrant adult winter steelhead escaping to Fifteenmile Creek.
2		c	Estimate age structure of upstream migrant adult winter steelhead escaping to Fifteenmile Creek.
2		d	Estimate selected morphometric characteristics of wild adult winter steelhead escaping to Fifteenmile Creek: including sex ratio, mean fork length (mm), and mean weight (gm).
2		e	Compile and analyze wild adult winter steelhead data collected during the field season and provide a summary of the data in an annual progress report.

Objective schedules and costs

Partition overhead, administrative, support, and any other common costs shared among objectives. The percentages for all objectives should total 100%. Enter just the objective numbers from Column 1 in the above table. Enter start and end dates for each objective using the mm/yyyy format (e.g. 05/2002 for May, 2002).

If you need more rows, press Alt-R. **Press Alt-C to calculate total.**

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %

1	2/1998	9/1998	29.00%
2	3/1998	9/1998	71.00%
			TOTAL 100.00%

Schedule constraints. Identify any constraints that may cause schedule changes. Describe major milestones if necessary.
Accurately estimating winter steelhead smolt production in FY 98 will be dependent upon when the contract is let and how quickly we can purchase capital equitment and begin sampling.

Completion date. Enter the last year that the project is expected to require funding.
Ongoing

Section 5. Budget

This section has two tables: 1) FY99 budget by line item, and 2) Outyear costs. Instructions for each part follow the heading.

FY99 budget by line item

List FY99 budget amounts for each category. If an item needs more explanation, provide it in the Note column. If the project uses PIT tags, include the cost ($2.90/tag). **Press Alt-C to calculate total.**

Item	**Note**	**FY99**
Personnel		$39,506
Fringe benefits		$15,802
Supplies, materials, non-expendable property		$19,540
Operations & maintenance		
Capital acquisitions or improvements (e.g. land, buildings, major equip.)		$163,000
PIT tags	# of tags:	
Travel		$3,210
Indirect costs		$17,875
Subcontracts		
Other		
TOTAL		$258,933

Outyear costs

List budget amounts for the next four years, and the estimated percentage of those costs for operations and maintenance (O&M).

Outyear costs	**FY2000**	**FY01**	**FY02**	**FY03**

Total budget	$90,000	$95,000	$100,000	$105,000
O&M as % of total	70.00%	70.00%	70.00%	70.00%

Section 6. Abstract

A condensed description to briefly convey to other fish and wildlife scientists, managers and non-specialists the background, objectives, approach and expected results. **In under 250 words,** include the following:

a. Specific items in any solicitation being addressed
b. Overall project goals and objectives
c. Relevance to the 1994 Columbia Basin Fish and Wildlife Program (benefit to fish and wildlife)
d. Methods or approach based on sound scientific principles
e. Expected outcome and time frame
f. How results will be monitored and evaluated

This project proposes monitoring wild winter steelhead smolt production and adult winter steelhead escapements for the Fifteenmile Creek subbasin. A mark and recapture program will be implemented at a downstream migrant screw trap to estimate subbasin smolt production and an upstream migrant adult trap will be used to determine adult escapements. Data will be used to monitor trends in both parameters and to determine if natural production of wild winter steelhead is increasing through time. An upward trend in natural production of wild winter steelhead will be used to indicate that the Fifteenmile Creek Habitat Improvement Project has benefited natural wild winter steelhead production based on the fact that no other major changes in land management practices have occurred in the subbasin that would cause a significant increase in subbasin production. This project is expected to require a long term commitment in resources (i.e., 6 or more years) because of 1) the life history characteristics of winter steelhead, 2) the severity of habitat degradation in the Fifteenmile Creek subbasin, and 3) the long time frame required for the effects of habitat improvement work to become manifest.

Section 7. Project description

This full description of the project should be in sufficient detail to include the following information under headings a through g **(maximum of 10 pages for entire project description)**:

a. Technical and/or scientific background. The overall problem should be clearly identified with background history and scientific literature review, if a research project. Location should be specific, if relevant. Goals and objectives of the 1994 Fish and Wildlife Program (FWP), NMFS Biological Opinion, or other plans in relation to the proposed project should be stated and described in some detail. Indicate whether the project mitigates losses in place, in kind, or if out-of-kind mitigation is being proposed.

Show how the proposed work is a logical component of an overall conceptual framework or model that integrated knowledge of the problem. The most significant previous work history related to the project, including work of key project personnel on

any past or current work similar to the proposal, should be reviewed. All work should be adequately referenced and listed at the end of this field.

The Fifteenmile Creek subbasin supports the eastern most stock of wild winter steelhead (*Onchorynchus mykiss*) in the Columbia River Basin. The population has never been supplemented with hatchery steelhead although a limited number (i.e., approximately 500) of hatchery legal rainbow trout were released annually through 1987, near the city of Dufur, to support a local area fishery. Escapements of adult winter steelhead are currently depressed below historical levels. Low escapements are primarily attributed to the loss, or degradation, of habitat in the subbasin, but also occurs as a result of both juvenile and adult passage related problems at Bonneville Dam.

The Bonneville Power Administration (BPA) began implementing habitat improvement projects in the Fifteenmile Creek subbasin beginning in 1986. The program was entitled The Fifteenmile Creek Habitat Improvement Project (Fifteenmile Creek project; Project Number 93-040; Contract # 95BI60772). Tasks were designed to improve egg to smolt survival and to facilitate the passage of both upstream migrant adult, and downstream migrant juvenile, winter steelhead past man made impediments to the migration of salmonids. Projects designed to improve habitat in the subbasin were identified and prioritized in the Fifteenmile Basin Fish Habitat Improvement and Implementation Plan (Smith et al, 1987). Actions taken, to date, include: 1) the fencing of approximately 80 miles of stream, 2) placement of in-stream structure in approximately 21 miles of stream, 3) the construction and installation of 120 irrigation screens, and 4) the construction of 6 fish passage structures at water diversions. The ongoing operation and maintenance of these projects has also been funded by the BPA.

There currently exists only limited quantitative or qualitative biological data to 1) assess the current status of the wild winter steelhead population and 2) evaluate habitat improvement work implemented in the Fifteenmile Creek subbasin. The only long term data set available for evaluating either parameter are annual spawning ground counts made at selected index sites located throughout the subbasin. Annual spawning ground surveys were conducted beginning in 1964. These surveys provide information that can be used to infer, in a general sense, the status of the wild winter steelhead population but do not provide the necessary quantitative biological data needed to accurately define two of the more important indices of population health; which are subbasin smolt production and adult wild winter steelhead escapements.

The ability to accurately define the benefits associated with a specific habitat improvement project, or group of projects, would be difficult, if not unfeasible, because of the lack of any pre-treatment data and a variety of confounding factors. This project proposes collecting three to five consecutive years worth of data on smolt production and adult escapements to provide information critical to evaluating the current status of the endemic stock of wild winter steelhead; the status of which is presently unclear. A more long term data set on smolt production and adult escapements, collected over six or more consecutive years, would primarily be used to determine if there is a general upward trend in wild winter steelhead production in the Fifteenmile Creek subbasin. A

significant increase in smolt production would be used as an indicator that habitat improvement work has had a beneficial impact on natural production based on the fact that that no recent changes in land management practices have occurred in the Fifteenmile Creek subbasin that would have resulted in a significant benefit to the wild production.

Although not specifically identified in the the Northwest Power Planning Council's Fish and Wildlife Program (FWP) report (NPPC 1994), this M&E project facilitates the FWP by addressing measures identified in Section 3. Section 3 defines the need to "monitor overall program implementation, evaluate the effectiveness of actions taken, and judge their scientific merits."(NPPC 1994). This project would provide the information needed to achieve this goal and directly addresses the data requirements for measure 3.3D.1. The need for collecting baseline information on the current status of the wild winter steelhead population in Fifteenmile Creek is also specifically identified in Columbia River Intertribal Fish Commission (1996; i.e., Wy-Kan-Ush-Mi Wa-Kish-Wit. Spirit of the salmon.)

This proposal is for a new research project to be implemented in the Fifteenmile Creek subbasin. Work planned for FY 98 includes 1) the development of sites for a downstream juvenile migrant trap and an upstream migrant adult trap, 2) the installation, operation, and maintenance of a juvenile migrant trap, 3) an estimation of the numbers of winter steelhead smolts migrating from the Fifteenmile Creek subbasin, and 4) collection of life history and biological data from winter steelhead smolts collected at the juvenile migrant trap. Both the juvenile and adult migrant traps will be located near the mouth of Fifteenmile Creek (i.e., approximately RM 1). Construction of the adult trap would be completed during the summer of 1998 and would be operational in December of 1998 to estimate adult winter steelhead escapements in the 1998-99 run year (FY 99). The ability to accurately estimate the number of winter steelhead smolts migrating from the Fifteenmile Creek subbasin in 1998 will be dependent upon when the project is approved and how much lead time is provided to hire project personnel, develop the sampling site, and install the juvenile migrant trap. The juvenile migrant trap would need to be installed by mid-March to accurately estimate subbasin winter steelhead smolt production for 1998.

The first year of this project would be implemented, in large part, with assistance from personnel working on the Hood River/Pelton ladder evaluation project (Hood River Production Program) and the Fifteenmile Creek project. This should reduce the overall costs associated with the initial implementation phase of the project and will provide access to personnel with extensive experience in areas that will be useful in facilitating the timely completion of many of the proposed project tasks. Permanent and seasonal personnel from the Fifteenmile Creek project would be used to develop the sampling sites and to construct the adult migrant trap. These personnel have extensive experience in the design and construction of fish ladders and diversions in both the Fifteenmile Creek subbasin and in the Trout Creek drainage (Deschutes River subbasin). The design and construction of the proposed adult migrant trap would utilize the same construction techniques as those needed to construct a fish ladder or major diversion.

Permanent personnel on the Hood River/Pelton ladder evaluation project would be responsible for supervising the personnel hired for this project to 1) install, operate, and maintain the juvenile migrant trap; 2) summarize and analyze the data; and 3) prepare an annual progress report. Personnel from the Hood River/Pelton ladder evaluation project have implemented similar work for the last four years in the Hood River subbasin and bring to this project extensive experience in the operation and maintenance of juvenile and adult migrant traps and in the summarization and analysis of life history and biological data. Ongoing research activities, pertaining to the juvenile and adult migrant traps, would continue to be supervised by personnel associated with the Hood River/Pelton ladder project and any required annual maintenance of the adult trapping facility would be the responsibility of personnel associated with the Fifteenmile Creek project.

b. Proposal objectives. Specific, measurable objectives or outcomes for the project should be presented concisely in a numbered list. Research proposals must concisely state the hypotheses and assumptions necessary to test these. Non-scientific projects must also state their objectives. Clearly identify any products (reports, structures, etc.) that would result from this project. For example, an artificial production program may state the species composition and numbers to be produced, their expected survival rates, and projected benefits to the FWP. A land acquisition proposal may state the conservation objectives and value of the property, the expected benefits to the FWP, and a measurable goal in terms of production. Methods and tasks (in heading e, below) are to be linked to these objectives and outcomes (by number).

Objective 1. Determine wild winter steelhead smolt production from the Fifteenmile Creek subbasin.

> Null Hypothesis: Wild winter steelhead smolt production has not shown any significant increase subsequent to habitat improvement work conducted in the subbasin.
>
> Alternative: Wild winter steelhead smolt production has shown a significant increase subsequent to habitat improvement work conducted in the subbasin.

We propose conducting a juvenile mark and recapture program at a downstream juvenile migrant trap, located near RM 1 in Fifteenmile Creek, to monitor wild winter steelhead smolt production from the Fifteenmile Creek subbasin. Data will be used to ascertain current levels of smolt production and to determine if wild production is increasing through time in conjunction with the restoration of anadromous salmonid habitat resulting from work implemented by the Fifteenmile Creek Habitat Improvement Project. Estimates will be summarized annually in a research progress report. Ancillary life history and biological data collected at the migrant traps would also be summarized in the annual progress report. Data would include information on migration timing, age structure, mean fork length (mm), and mean condition factor.

Objective 2. Determine escapements of wild adult winter steelhead to the Fifteenmile Creek subbasin.

Null Hypothesis: Escapements of adult wild winter steelhead have not increased significantly subsequent to habitat improvement work conducted in the subbasin.
Alternative: Escapements of adult wild winter steelhead have increased significantly subsequent to habitat improvement work conducted in the subbasin.

We propose counting wild adult winter steelhead at an adult migrant trap locate near RM 1 in Fifteenmile Creek to monitor escapements to the Fifteenmile Creek subbasin. Data will be used to ascertain current escapements and to determine if escapements are increasing through time in conjunction with the restoration of anadromous salmonid habitat resulting from work implemented by the Fifteenmile Creek Habitat Improvement Project. Escapements will be summarized annually in a research progress report. Ancillary adult life history and biological data collected at the adult migrant trap would also be summarized in the annual progress report. Data would include information on migration timing, age structure, mean fork length (cm) and weight (gm), and sex ratio as a percentage of females.

c. Rationale and significance to Regional Programs. The rationale behind the proposed project should be presented and project objectives and hypotheses related as specifically as possible to the FWP objectives and measures or to other plans. You should make a convincing case for how the proposed work will further goals of the FWP. Relevant projects in progress in the Columbia Basin and elsewhere should be listed and discussed in relation to the proposed project. Arrangements should be identified and documented for cooperation and synergistic relationships among the proposed project, *other project proposals,* and existing projects. Any particularly novel ideas or contributions offered by the proposed project should be highlighted and discussed.

This project is designed to provide information that will be used to determine if habitat improvement work, implemented by the Fifteenmile Creek project, has had a beneficial impact on wild winter steelhead production in the Fifteenmile Creek subbasin. Implementation of this project will be closely integrated with both the Fifteenmile Creek project and the Hood River Pelton ladder project, with respect to 1) the supervision of personnel, 2) development of sampling sites, and 3) the construction of the adult trapping facility. Integration of specific components of this project, into these two existing projects, should help to minimize the startup costs associated with the proposed project, as well as future costs associated with the operation and maintenance of the trapping facilities.

d. Project history (for continuing projects). If the project is continuing from a previous year, the history must be provided. This includes projects that historically began as a different numbered projects (identify number *and short title*). For continuing projects, the proposal primarily will be an update of this section. List the following:

- project numbers (if changed)
- project reports and technical papers
- summary of major results achieved
- adaptive management implications
- years underway (see attached spreadsheet)
- past costs (see attached spreadsheet)

This is a new project proposed for FY 98.

e. Methods. How the project is to be carried out based on sound scientific principles should be described (this is applicable to all types of projects). Include scope, approach, and detailed methodology. If methods are described in detail in another document, summarize here and cite reference. The methods should include, as appropriate, but not be limited to such items as:

- tasks associated specifically with objectives
- critical assumptions
- description of proposed studies, experiments, treatments or operations in the sequence that they are to be carried out
- any special animal care or environmental protection requirements
- any risks to habitats, other organisms, or humans
- justification of the sample size
- methods by which the data will be analyzed
- methods for monitoring and evaluating results
- kinds of results expected

Each proposer should complete the methods section with an objective assessment of factors that may limit success of the project and/or critical linkages of the proposal with other work (e.g., a smolt monitoring program, etc.).

Objective 1.

Downstream migrant rainbow trout and winter steelhead smolts will be trapped at a rotary-screw trap located at approximately RM 1 in Fifteenmile Creek. The screw traps will be sampled on a daily basis. Sampling will be conducted primarily in the morning to reduce temperature related stress. Juveniles will be anesthetized, examined for marks, and counted. Counts of downstream migrant rainbow-steelhead (rb-st) will be made for two size categories; they will include fish greater than or equal to 150 mm fork length and fish less than 150 mm fork length. This separation into two size categories will be made because data from other studies indicates the smaller size category is predominately comprised of age 0 migrants which are not considered to be smolts. The cutoff defining each size category may change as subbasin specific data is collected at the screw trap. A random sample of juveniles, collected from both size categories, will be measured to the nearest millimeter fork length, weighed to the nearest 0.1 gram, and have a sample of scales taken for purposes of aging the juvenile. Data will be recorded on computerized data entry forms and keypunched into a computer database. Juvenile scale samples will be transferred to glass slides and read by trained personnel located at ODFW's research lab in Corvallis.

Downstream migrant rb-st trapped at the screw trap will be used to indirectly estimate winter steelhead smolt migration timing and production because no accurate methodology exists to visually identify rainbow trout from downstream migrant steelhead smolts. A mark and recapture methodology will be used to estimate

numbers of migrant rb-st passing the migrant trap. Downstream migrants will be marked with a panjet needle-less injector. The panjet will be used to shoot a narrow high speed stream of colored dye at selected fins. This process will be used to mark the fin with a unique color code by infusing a small amount of colored dye below the epidermal layer. The dye color and marked fin combination will be changed every two weeks to uniquely mark fish at defined time intervals throughout the period of smolt migration.

A pooled Petersen estimate with Chapman's modification (Ricker 1975) will be used to estimate numbers of downstream migrants, by size category. Approximate 95% confidence intervals will be calculated according to methods described in Olsen et al. (1996).

Winter steelhead data will be summarized to provide estimates of smolt production, mean fork length, and mean condition factor, by age category. Summaries will be formatted both by brood year and year of sampling. Migration timing will also be characterized by age category and for the sample population. Data will be summarized in an annual progress report.

Constraints: Several uncertainties make it difficult to evaluate our ability to accurately estimate numbers of downstream migrant winter steelhead smolts in Fifteenmile Creek. The lack of pre-existing or recent biological information makes it difficult to determine if current population sizes will allow us to mark and recapture enough juveniles to develop an accurate estimate of smolt production. Trapping efficiency will also effect our ability to obtain adequate sample sizes. Recapture rates at a floating screw trap operated at a site locate near the mouth of the Hood River average 5-8%. Highly fluctuating streamflows and heavy debris loads, common in the Fifteenmile Creek subbasin, may effect our ability to achieve similar catch rates. Depending on what types of problems are encountered it may be necessary to either adjust our operating schedules or to identify alternative trapping sites. Few other alternative trapping sites are available, however, that would alleviate these problems and still provide the capability estimating smolt production for the entire subbasin.

The most immediate problem concerns the time frame in which the project would be approved and the contracts signed. The lag time between the signing of a contract and the hiring of project personnel, and the development of a sampling site, may make it difficult to accurately estimate wild winter steelhead smolt production in the first year of the project. Data collected in the Hood River subbasin indicates that we would need to begin sampling by mid- to late March in order to sample from throughout the wild winter steelhead smolt migration period. Contracts would probably need to be signed sometime in early January in order to meet this tight time schedule.

Objective 2.

Upstream migrant adult wild winter steelhead will be trapped at an adult trapping facility located at approximately RM 1 in Fifteenmile Creek. The trapping facility will be operated daily during the migration period for winter steelhead. The trap will be checked in the morning to minimize potential handling stress associated with sampling fish during the afternoon when water temperatures are typically higher.

Adult winter steelhead will be anesthetized with CO_2, classified by sex, and examined for injuries. Injuries will be categorized as either a predator scar, net mark, hook scar, or scrape. Predator scars will include both closed and open wounds. A random sample of adults will be weighed to the nearest kg, measured to the nearest centimeter fork length, and have a sample of scales taken to age the adult. Data will be recorded on computerized data entry forms and keypunched into a computer database. Adult scale samples will be transferred to gummed cards and sent to ODFW's research lab in Corvallis where an acetate impression will be made of each card and they will be read by trained personnel. All adults collected at the adult migrant trap will be floy tagged prior to release. Floy tags will provide the capability of identifying potential recaptures at the adult migrant trap.

Adult winter steelhead data will be summarized to provide estimates of escapement, sex ratio, mean fork length, and mean weight, by age category. Summaries will be formatted both by brood year and run year. Adult migration timing will also be characterized for the sample population. Data will be summarized in an annual progress report.

Constraints: We propose constructing the adult trapping facility during the summer of 1998 to estimate escapements beginning with the 1998-99 run year. There should be no problems achieving this schedule. The primary constraint associated with estimating adult winter steelhead escapements to the Fifteenmile Creek subbasin pertain to environmental conditions that exist during the peak period of migration. Fifteenmile Creek is subject to highly fluctuating stream flows and heavy debris load during the spring when wild adult winter steelhead are returning to the subbasin. These conditions may make it impossible to operate and maintain an economically feasible trapping facility.

f. Facilities and equipment. All major facilities and equipment to be used in the project should be described in sufficient detail to show adequacy for the job. The proposal should indicate whether there are suitable (based on contemporary standards) field equipment, vehicles, laboratory and office space and equipment, life support systems for organisms, and computers, for example. Any special or high-cost equipment to be purchased with project funds should be identified and justified. Reference to other proposals is allowed but note that limitations of those proposals could effect the evaluation of the ones citing them.

Approach: We propose developing sites to monitor adult winter steelhead escapements and to monitor subbasin smolt production. There are two possible alternatives for implementing this project. One alternative is to construct an adult trapping facility at a currently existing fish ladder located near the mouth of Fifteenmile Creek. The benefit to

taking this approach is that the existing fish ladder needs to be modified in order to better facilitate passage and is also in need of maintenance. The funding needed to implement and complete the necessary work is currently unavailable. Because this approach would, in part, have the objective of improving adult passage in Fifteenmile Creek, it would be possible to pay for a part of the site preparation using Mitchell Act dollars. Therefore, the initial construction costs could be shared between the state and BPA. The alternative approach is to build a fish ladder, and adult counting facility, at a site located approximately one mile upriver from the mouth of Fifteenmile Creek. The benefit associated with this alternative is based on the fact that ODFW currently has an easement to operate a trapping facility at the proposed site. The juvenile trapping facility would probably be placed in the latter location, regardless of the site chosen for the adult trapping facility, primarily because of the limited number of suitable sites available for operating a downstream migrant trap in the lower Fifteenmile Creek subbasin. Capital expenditures would primarily be limited to the purchase of a juvenile migrant trap (i.e., rotary screw trap).

g. References. (Not included in 10-page limit for this section.) Provide complete citations to all publications referred to in Sections 6a-f. List in order: author(s), date, title, report number, publisher or agency, location. References will not be read by reviewers; the substance of any reference should be described in the text and the source cited. Sample citation:

Rondorf, D.W., and K.F. Tiffan. 1997. Identification of the spawning, rearing and migratory requirements of fall chinook salmon in the Columbia River Basin. Annual Report 1995. DOE/BP-21078-5, Bonneville Power Adminsitration, Portland, Oregon.

Columbia River Intertribal Fish Commission. 1996. Wy-Kan-Ush-Mi Wa-Kish-Wit. Spirit of the salmon. The Columbia River anadromous fish restoration plan of the Nez Perce Umatilla, Warm Springs, and Yakama tribes. Portland, Oregon, Volume II::34-35

Olsen, E.A., R.A. French, and A.D.Ritchey. 1996. Hood River and pelton ladder evaluation studies. Annual Progress Report of Oregon Department of Fish and Wildlife (Project Numbers 88-29, 89-29-01, 89-053-03, 89-053-04, and 93-019; Contract Numbers DE-BI79-89BP00631, DE-BI79-89BP00632, DE-BI79-93BP81756, DE-BI79-93BP81758, DE-BI79-93BP99921) to Bonneville Power Administration, Portland, Oregon.

Ricker, W.E. 1975. Computation and interpretation of biological statistics of fish populations. Bulletin of the Fisheries Research Board of Canada 191, Ottawa, Ontario.

Nortwest Power Planning Council. 1994. Columbia River basin fish and wildlife program. Report of the Northwest Power Planning Council (Report No. 94-55), Portland, Oregon.

Smith, R., D. Heller, J. Newton, H. Forsgren, R. Boyce, and K. MacDonald. 1987. Fifteenmile basin fish habitat improvement implementation plan. Report of Oregon Department of fish and Wildlife to Bonneville Power Administration, Portland, Oregon.

Section 8. Relationships to other projects

Indicate how the project complements or includes collaborative efforts with other projects; put the work into the context of other work funded under the FWP. If the proposed project requires or includes collaboration with other agencies, organizations or scientists, or any special permitting to accomplish the work, such arrangements should be fully explained. If the relationship with other proposals is unknown or is in conflict with another project, note this and explain why.

This is not intended to duplicate the Relationships table in Section 3. Instead, it allows for more detailed descriptions of relationships, includes non-interdependent relationships, and includes those not limited to specific Bonneville projects.

We propose integrating this project with activities associated with the Hood River/Pelton ladder project and the Fifteenmile Creek Habitat Improvement Project (Fifteenmile Creek project). Personnel on the Fifteenmile Creek project would design and construct the adult trapping facility and develop the juvenile trapping site. Personnel on the Hood River/Pelton ladder project would 1) assist in the installation of the juvenile migrant trap, 2) supervise project personnel, 3) assist project personnel in summarizing and analyzing data, and 4) prepare the annual report. The integration of the project into these two other ongoing projects should significantly reduce the annual administrative costs associated with this project.

Section 9. Key personnel

Include names, titles, FTE/hours, and one-page resumes for key personnel (i.e. principal investigator, project manager), and describe their duties on the project. Emphasize qualifications for the proposed work. Resumes should include name, degrees earned (with school and date), certification status, current employer, current responsibilities, list of recent previous employment, a paragraph describing expertise, and up to five recent or especially relevant publications or job completions.

Program Leader (Chip Dale; FTE 0.05)

Resume not available.

Project Leader (Erik Olsen; Hood River/Pelton ladder project; FTE .09)

Education

1970-1974 Portland State University, Portland, Oregon
Major: Biology

1974-1976 Oregon State University, Corvallis, Oregon
Degree: B.S. in Fisheries Science

Experience

12/92-Present

Oregon Department of Fish and Wildlife

Project leader on the Hood River/Pelton ladder project (Project No. 88-053-04). Primary responsibilities include: 1) project administration, 2) preparation of a research sampling plan to evaluate a hatchery supplementation program and to collect information on the life history and biology of anadromous and resident salmonids in the Hood River subbasin, 3) summarizing and analyzing project data, and 4) preparation of annual progress reports and statements of work. Experience gained in 1) the development and maintenance of databases, 2) development of software to summarize data using both FORTRAN and Fox Pro programming languages, and 3) the life history and biology of anadromous salmonids.

06/90-11/92

Oregon Department of Fish and Wildlife

Project leader on the Coordinated Information System (Project No. 88-108; Contract No. DE-FC79-89BP94402). Primary responsibilities include: 1) project administration, 2) preparation of a standardized reporting format for reporting information on the life history and biology of anadromous salmonids in Oregon subbasins to the Columbia River basin, 3) preparation of a report, summarizing in a standardized format, all available information on the life history and biology of anadromous salmonids in Oregon subbasins to the Columbia River Basin, and 4) preparation of quarterly reports and statements of work. Experience gained in 1) the presentation and summarization of complex biological data, 2) development and maintenance of databases, 3) development of software to summarize data using both FORTRAN and Fox Pro programming languages, 4) the life history and biology of stocks of anadromous salmonids located throughout the Columbia River Basin, and 5) issues pertaining to the management of stocks of anadromous salmonids in the Columbia River Basin.

Reports authored or co-authored

Lindsay, R.B., W.J. Knox, M.W. Flesher, B.J. Smith, E.A. Olsen, and L.S. Lutz. 1986. Study of wild spring chinook salmon in the John Day River system. Final Report of Oregon Department of Fish and Wildlife (Project No. 79-4; Contract No. DE-A179-83BP39796) to Bonneville Power Administration, Portland, Oregon.

Olsen, E.A., R.A. French, and J.A. Newton. 1994. Hood River and pelton ladder evaluation studies. Annual Progress Report of Confederated Tribes of the Warm Springs Reservation and Oregon Department of Fish and Wildlife (Project Numbers 89-29, 89-29-01, 89-053-03, 89-053-04, and 93-019; Contract Numbers DE-BI79-89BP00631, DE-BI79-89BP00632, DE-BI79-93BP81756, DE-BI79-93BP81758, DE-BI79-93BP99921) to Bonneville Power Administration, Portland, Oregon.

Olsen, E.A., R.A. French, and A.D. Ritchey. 1995. Hood River and pelton ladder evaluation studies. Annual Progress Report of Oregon Department of Fish and Wildlife and Confederated Tribes of the Warm Springs Reservation (Project Numbers 88-29, 89-29-01, 89-053-03, 89-053-04, and 93-019; Contract Numbers DE-BI79-89BP00631, DE-BI79-89BP00632, DE-BI79 93BP81756, DE-BI79-93BP81758, DE-BI79 93BP99921) to Bonneville Power Administration, Portland, Oregon.

Olsen, E.A., R.A. French, and A.D. Ritchey. 1996. Hood River and pelton ladder evaluation studies. Annual Progress Report of Oregon Department of Fish And Wildlife (Project Numbers 88-29, 89-29-01, 89-053-03, 89-053-04, and 93-019; Contract Numbers DE-BI79-89BP00631, DE-BI79-89BP00632, DE-BI79-93BP81756, DE-BI79-93BP81758, DE-BI79-93BP99921) to Bonneville Power Administration, Portland, Oregon.

Olsen, E.A., and R.B. Lindsay. 1984. Evaluation of habitat improvements – John Day River. Closing Quarterly Report of Oregon Department of Fish and Wildlife (Project Number 82-9) to Bonneville Power Administration, Portland, Oregon.

Olsen, E.A., and R.B. Lindsay. Undated. Summer steelhead in the Deschutes River, Oregon. Information Reports (Fish) of the Oregon Department of Fish and Wildlife, Portland, Oregon. (Unpublished draft.)

Olsen, E., P. Pierce, M. McLean, and K. Hatch. 1992. Stock summary reports for Columbia River anadromous salmonids, volume I: Oregon. Final Report of Oregon Department of Fish and Wildlife (Project No. 88-108; Contract No. DE-FC79-89BP94402) to Bonneville Power Administration, Portland, Oregon.

Olsen, E., P. Pierce, M. McLean, and K. Hatch. 1992. Stock summary reports for Columbia River anadromous salmonids, volume II: Oregon. Final Report of Oregon Department of Fish and Wildlife (Project No. 88-108; Contract No. DE-FC79-89BP94402) to Bonneville Power Administration, Portland, Oregon.

Oregon Department of Fish and Wildlife and Confederated Tribes of the Warm Springs Reservation of Oregon. 1990. Hood River subbasin salmon and steelhead production plan. Columbia Basin System Planning Report to Northwest Power Planning Council, Portland, Oregon.

Oregon Department of Fish and Wildlife and Confederated Tribes of the Warm Springs. Undated. Hood River/Pelton ladder master agreement. Project Plan of Oregon Department of Fish and Wildlife and Confederated Tribes of the Warm Springs Reservation of Oregon (Project 89-029; Contract DE-BI79-93BP81758) to Bonneville Power Administration, Portland, Oregon. (Unpublished draft.)

Project Leader (Ray Hartlerode; Fifteenmile Creek project; FTE 0.09)

Education

1979 – 1983 Oregon State University; Corvallis, Oregon
Degree: B.S. in Fisheries Science

Training

AFS Riparian Restoration Workshop
NMFS Fish Passage and Diversion Structures Training
State of Oregon DAS Core Curriculum Training for Managers and Supervisors
Northwest Fish Screening and Passage Workshops

Experience

1991-Present, Oregon Department of Fish & Wildlife; Project Leader on Fifteenmile, Trout, and Buckhollow Creek Habitat Restoration Projects. Project Leader on N.E. Oregon Screens Trout Creek Passage Project, Project Leader for NMFS Mitchell Act Fifteenmile/Trout Creek Fish Screens Project.

Duties

Fiscal management of project budgets, supervision of project personnel to implement and maintain fish habitat projects, preparation of proposals, works statements, contracts, leases, and reports, coordination of habitat projects with other agencies and organizations performing conservation programs in the watershed, Identifies stream reaches with altered habitat conditions that lack necessary habitat types to sustain natural production of fish populations, determines appropriate fish habitat restoration/improvement actions, negotiates with government and private landowners for cooperation and permission to conduct habitat restoration projects, develops program direction in the form of standards and guides for all regional habitat programs; including, but not limited to, Bonneville Power Administration (BPA) National Marine Fisheries Service (NMFS) and state funded fish habitat and screening projects.

Experience

1987-1991 – Oregon Department of Fish & Wildlife. Assistant Project Leader, Trout Creek Habitat Restoration Project

Duties

Conducted fish habitat surveys, recommended habitat restoration treatments, developed habitat restoration construction contracts, inspected construction contracts, negotiated landowner riparian leases, wrote landowner riparian leases., performed maintenance on riparian improvements such as riparian fencing and instream habitat structures.

Assistant Project Leader (Rod French; Hood River/Pelton ladder project; FTE .09)

Education

1986 Oregon State University, Corvallis, Oregon

Degree: B.S. in Fisheries Science

Experience

12/92-Present

Oregon Department of Fish and Wildlife

Assistant project leader on the Hood River/Pelton ladder project (Project No. 88-053-04). Primary responsibilities include: 1) the implementation of project field work, 2) assisting the project leader in the preparation of a research sampling plan to evaluate a hatchery supplementation program and to collect information on the life history and biology of anadromous and resident salmonids in the Hood River subbasin, 3) summarizing and analyzing project data, 4) the purchase of field equipment, 5) the coordination of field work with other project cooperators, 6) assisting the project leader in the preparation of annual progress reports and statements of work, and 7) giving presentations on project results and findings. Experience gained in 1) the use of downstream migrant screw traps, 2) the use of adult trapping facilities, and 3) the life history and biology of anadromous salmonids.

06/92-11/92

Oregon Department of Fish and Wildlife

Assistant project leader on the Umatilla Hatchery Monitoring and Evaluation Project. Primary responsibilities include 1) the implementation of project tasks designed to collect information on water chemistry; life history and biology of anadromous salmonids; and harvest, 2) the summarization and analysis of project data, 3) assisting the project leader in preparation of annual progress report, and 4) giving presentations at professional society meetings.

01/88-05/92

Oregon Department of Fish and Wildlife

Fisheries Biologist 1 on the Native Trout Research Project. Primary responsibilities include assisting project leader in the collection of data on native trout in Klamath, Harney and Deschutes river subbasins. Data was collected on 1) migration timing, 2) numbers of downstream migrants, temporal and spatial distribution of spawning, 3) life history and biology of resident salmonids, and 4) relative resistance of trout to specific pathogens. Assisted with preparation of monthly and annual reports and with the preparation of publications for scientific journals. Prepared and presented presentations for professional societies and sportsman's groups.

Report's authored or co-authored

Buchanan, D.V., A.R. Hemmingsen, D.L. Bottom, R.A. French, and K.P. Currens. 1989. Native trout project. Annual Progress Report of Oregon Department of Fish and Wildlife (Fish Research Project F-136-R), Portland, Oregon.

Buchanan, D.V., A.R. Hemmingsen, D.L. Bottom, P.J. Howell, R.A. French, and K.P. Currens. 1990. Native trout project. Annual Progress Report of Oregon Department of Fish and Wildlife (Fish Research Project F-136-R), Portland, Oregon.

Buchanan, D.V., A.R. Hemmingsen, D.L. Bottom, P.J. Howell, R.A. French, and K.P. Currents. 1991. Native trout project. Annual Progress Report of Oregon Department of Fish and Wildlife (Fish Research Project F-136-R), Portland, Oregon.

Currens, K.P., A.R. Hemmingsen, R.A. French, D.V. Buchanan, C.B. Schreck, and H.W. Li. 1997. Introgression and susceptibility to disease in a wild population of rainbow trout (Oncorhynchus mykiss). North American Journal of Fisheries Management. In Press.

Hemmingsen, A.R., D.V. Buchanan, D.L. Bottom, R.A. French, K.P. Currents, and F.C. Shrier. 1988. Native trout project. Annual Progress Report of Oregon Department of Fish and Wildlife (Fish Research Project F-136-R), Portland, Oregon.

Hemmingsen, A.R., R.A. French, D.V. Buchanan, D.L. Bottom, and K.P. Currents. 1992. Native trout project. Annual Progress Report of Oregon Department of Fish and Wildlife (Fish Research Project F-136-R), Portland, Oregon.

Hemmingsen, A.R., R.A. French, and D.V. Buchanan. 1993. Native trout project. Annual Progress Report of Oregon Department of Fish and Wildlife (Fish Research Project F-136-R), Portland, Oregon.

Olsen, E.A., R.A. French, and J.A. Newton. 1994. Hood River and pelton ladder evaluation studies. Annual Progress Report of Confederated Tribes of the Warm Springs Reservation and Oregon Department of Fish and Wildlife (Project Numbers 89-29, 89-29-01, 89-053-03, 89-053-04, and 93-019; Contract Numbers DE-BI79-89BP00631, DE-BI79-89BP00632, DE-BI79-93BP81756, DE-BI79-93BP81758, DE-BI79-93BP99921) to Bonneville Power Administration, Portland, Oregon.

Olsen, E.A., R.A. French, and A.D. Ritchey. 1995. Hood River and pelton ladder evaluation studies. Annual Progress Report of Oregon Department of Fish and Wildlife and Confederated Tribes of the Warm Springs Reservation (Project Numbers 88-29, 89-29-01, 89-053-03, 89-053-04, and 93-019; Contract Numbers DE-BI79-89BP00631, DE-BI79-89BP00632, DE-BI79 93BP81756, DE-BI79-93BP81758, DE-BI79 93BP99921) to Bonneville Power Administration, Portland, Oregon.

Olsen, E.A., R.A. French, and A.D. Ritchey. 1996. Hood River and pelton ladder evaluation studies. Annual Progress Report of Oregon Department of Fish And Wildlife (Project Numbers 88-29, 89-29-01, 89-053-03, 89-053-04, and 93-019; Contract Numbers DE-BI79-89BP00631, DE-BI79-89BP00632, DE-BI79-93BP81756, DE-BI79-93BP81758, DE-BI79-93BP99921) to Bonneville Power Administration, Portland, Oregon.

Assistant Project Leader (Steve Springston; Fifteenmile Creek project; FTE .09)

Education

1976 HS diploma; 15 credit hours of post secondary education

Degree: B.S. in Fisheries Science

Experience

02/88-Present

Oregon Department of Fish and Wildlife

Assistant Project Leader on the Fifteenmile Creek Habitat Restoration Project (Project #86-79-01). Primary responsibilities include but are not limited to: 1) assisting project leader with administration and budget preparation, 2) develop riparian lease agreements, 3) write construction specifications and contracts, 4) administer construction contracts, 5) develop cooperative agreements with private landowners and other agencies, 6) provide feedback and recommendations to the project leader, 7) assist project leader and other agency's with grant applications, 8) write annual, monthly, and special reports, 9) enter data into computer, 10) purchase all field supplies, 11) write purchase orders, transmittals, 12) represent ODFW at meetings, 13) conduct field tours and make presentations for schools, agency's and special interest groups, 14) monitor leased riparian habitat, 15) collect and summarize stream temperature data, flow data, spawning ground data, 16) provide daily task guidance and set work priorities for one Technician II and one Technician I, and 17) direct volunteer work crews performing project maintenance.

Section 10. Information/technology transfer

How will technology or technical information obtained from the project be distributed or otherwise implemented? Methods can include publication, holding of workshops, incorporation in agency standards or facilities, and commercialization.

Data collected from this project will be summarized in an annual progress report and distributed to fishery managers. Project personnel will present information to local watershed councils's and sport's groups; the NPPC, CBFWA, and BPA; and ODFW staff.

Congratulations!

Thank you for completing the FY99 Proposal Form. Please print and save this file to diskette, and mail both to the address shown at the top of this document. To ensure a thorough review of your proposed work, this form will be screened for completeness. If it is not complete, it may be returned to you with a request for additional information.